REMARKS

Claims 1-6 were previously canceled. Claims 7-18 have been amended. New claims 19-21 have been added. It should be appreciated that the amendments are fully supported in the specification and do not add new matter. Claims 7-21 remain in the application.

The substitute specification filed September 16, 2002 was not entered since a marked-up version of the specification as filed was not received. The Applicant submits herewith a marked-up version of the specification as filed in Appendix 1. The Applicant respectfully requests that the substitute specification be entered.

The disclosure is objected to since in page 2 there is a reference to the claims. The specification has been amended accordingly to remove this reference. The Applicant respectfully submits that the specification is in a condition for allowance, which allowance is respectfully solicited.

Claims 7, 9-11, 14, 16-18 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement that the subject matter reasonably conveys to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. In particular, is the omission of the subject matter of the solid ring of adhesive as being a hot melt type adhesive.

Further claims 7, 9-11, 14, 16-18 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner pointed to the scope and meaning of "solid ring of adhesive". Also, in claims 14 and 18 there was no antecedent basis for "said free end". The claims have been amended accordingly to correct these informalities. The

Applicant respectfully submits that the specification is in a condition for allowance, which allowance is respectfully solicited.

Claims 7-8 and 14-15 were rejected under 35 U.S.C. §102(b) as being anticipated by Gadsden et al. (US 4,896,904), or in the alternative rejected under 35 U.S.C. §103(a) as being obvious over Gadsden et al. (US 4,896,904). The Applicant respectfully traverses both of these rejections.

U.S. Patent Number 4,896,904 to Gadsden et al. discloses a device, or coupling element for connecting a plurality of elongate objects 5, 6. In particular, Fig. 12 shows a tube 25 with a connector device 26 on each end. A skirt 27 extends around the end of the tube, and the skirt 27 contains a bonding insert. The skirt also contains a barrier insert adjacent the bonding insert, and remote from the ends of the rigid tube. The barrier insert prevents fused epoxy adhesive from forming away from the pipes under the partially recovered sections of the skirts. The coupling element includes a tube 1 with a lining of hot melt adhesive 2 along the entire length of the tube. The coupling element includes a bonding insert 3 in the form of a ring of solid epoxy adhesive. The coupling element also includes a solid fusible barrier insert 4. There is no gap between the bonding insert and the barrier insert. A method is provided whereby an inner tube 6 is insertable into a fluid line 5. The coupling element is slipped over the end of the inner pipe 6, and the inner pipe 6 is pushed onto the end of the outer pipe 5, until the bonding insert is adjacent the end of the outer pipe, and the end of the pipe abuts the epoxy ring. The device is heated to melt the hot-melt adhesive to form a bond between the inner and outer pipes. The barrier insert initially prevents the adhesive from flowing along the pipe away from the connection. At a sufficient temperature, the barrier insert will melt. However, Gadsden et al. '904 does not disclose the

limitation of a connecting wall secured to the *end* of the inner tube, as disclosed by the Applicant.

In contradistinction, the present application discloses a tubular coupling element for a glued joint with a fluid line. The tubular element includes an inner tube having a front end and a rear end, and the front end is insertable into a fluid line. The tubular coupling element further includes an outer tube having a front end and a rear end that is concentric to the inner tube. The tubular element also includes a connecting wall secured to the rear end of the inner tube and the outer tube. The outer tube, connecting wall and inner tube define an annular gap, and a solid ring of heat melt adhesive is disposed within the annular gap and positioned against the connecting wall. The solid ring of adhesive fills about one-half the annular gap.

Gadsden et al. does not disclose a coupling element that includes a connecting wall secured to both the end of the inner tube and the outer tube. Also, Gadsden et al. does not disclose a bonding insert that is a ring of hot melt adhesive. In fact, the teachings of Gadsden teach away from the present invention since Gadsden teaches that the length of the tube 1 is lined with a hot melt adhesive. Also, Gadsden teaches the inclusion of both a bonding insert and a barrier insert adjacent to the bonding insert. This is clearly not the same structure as a solid ring of hot melt adhesive disposed in an annular gap formed by the inner tube, an outer tube and connecting wall. The advantage of the present reference is that a barrier insert is not required to prevent the flow of adhesive away from the joint.

The Gadsden reference does not teach or otherwise disclose the claimed invention of claims 7-8 and 14-15 as amended. Specifically, the Gadsden reference merely teaches a device that includes both a bonding insert formed from a solid, fusible, thermosetting adhesive for providing a permanent bond between the objects and one or more barrier inserts that prevent

egress of fused thermosetting adhesive from the connection between the objects when the device is heated. The Gadsden reference teaches that the barrier insert is preferably located adjacent the bonding insert, and that the barrier insert is positioned to be in contact with the male part of the joint. In this way, the barrier insert prevents the flow of adhesive out of the joint. The Gadsden reference simply does not teach a wall interconnecting the outer tube and the inner tube, or a solid ring of hot melt adhesive disposed in an annular gap formed by the inner tube, outer tube and connecting wall, as taught by the Applicant.

The Examiner suggests that the inclined wall of the skirt portions of Gadsden et al. corresponds to the connecting wall taught by the Applicant. However, the present application is distinguishable because the adhesive ring or bonding ring is adjacent the connecting wall. In Gadsden et al., the barrier insert is close to but not adjacent the inclined portion of the skirt. The present application does not rely on a barrier ring to control adhesive flow. These are critical distinctions.

Therefore, Applicant respectfully submits that claims 7-8 and 14-15, as amended, and the claims dependent therefrom are in a condition for allowance over the rejection under §102(b), which allowance is respectfully solicited.

Further, the Applicant respectfully submits that claims 7-8 and 14-15, as amended, and the claims dependent therefrom are in a condition for allowance over the rejection under §103(a), which allowance is respectfully solicited.

Claims 16 and 17 were rejected under §103(a) as being unpatentable over Gadsden et al as applied above and further in view of Evans (US 3,910,448) and Brooks (US 4,092,193). The Applicant respectfully traverses this rejection for the reasons set forth with respect to claim 14.

Both of these claims depend from claim 14. Since the Applicant has shown that the base claim is allowable over the cited reference, likewise the dependent claims are allowable.

Claims 7-8 and 14-15 were rejected under 35 U.S.C. §102(b) as being anticipated by Nakashiba et al. (US 5,150,922). The Applicant respectfully traverses this rejection.

U.S. Patent Number 5,150,922 to Nakashiba et al. discloses an electrofusion joint and header for supplying hot water and performs well at elevated temperatures. Nakashiba discloses an electrofusion joint 20 mounted in the mating portion 17 of members 15, 16. The joint has a tubular crosslinked polyolefin layer 12 which forms the main body of the joint. The joint also includes two joining portions forming a non-crosslinked polyolefin layer 13 that are formed as an integral part of an inner side of the crosslinked polyolefin layer 12. A heating electrical wire is provided either within or on an outer or inner surface of the non-crosslinked polyolefin layer 13. In particular, Figure 4 shows supports 23 for members 15, 16 to be joined. The supports 23 define a groove 22 inwardly of the non-crosslinked polyolefin layers 13 into which the members 15, 16 can be inserted to at their ends. The supports 23 are made of a crosslinked polyolefin and extend from the center of the crosslinked polyolefin layer 12 to form a groove 22 between the support 23 and the non-crosslinked polyolefin layers 13. The members 15, 16 are inserted into the grooves 22 on an opposite side of the joint 20 and are mounted to contact the non-crosslinked polyolefin layers 13, and are supported by the supports. Upon application of the electric current to the electric wires 14, the non-crosslinked layers 13 are melted and fuse to from the joint. The members 15 and 16 are pipes having a layer of a thermoplastic resin. Nakashiba et al. '922 does not disclose a connecting wall secured to the rear *end* of an inner tube and a rear end of the concentric outer tube that defines an annular gap, and a ring of hot melt adhesive disposed in the annular gap adjacent the connecting wall, as disclosed by the Applicant.

Nakashiba et al. '922 does not disclose a coupling element that includes a connecting wall secured to the end of the inner tube. Also, Nakashiba et al. '922 et al. does not disclose a bonding insert that is a ring of hot melt adhesive. In fact, the teachings of Nakashiba et al. '922 teach away from the present invention, since Nakashiba et al. '922 teaches a laminate structure that extends along the length of the tube. Nakashiba et al. '922 teaches that the layers includes a crosslinked polyolefin layer 12, a non-crosslinked polyolefin layer with heating element wires and support layer made of a crosslinked polyolefin layer. In fact, the crosslinked layer 12 and support 23 form an integral groove for receiving a member. The bonding layer is not disposed in the annular groove, as taught by the Applicant. The bonding layer is adjacent the groove and surrounded by the crosslinked polyolefin layer, which is clearly not the same as a solid ring of hot melt adhesive disposed adjacent the connecting wall in an annular gap formed by the inner tube, an outer tube and a connecting wall, as disclosed by the Applicant.

The Examiner argues that the laminate structure disclosed by Nakashiba et al. '922 includes an outer tube, a connecting wall and an inner tube (or support) 23 and a solid ring of non-crosslinked polyolefin disposed in the annular gap between the outer tube and the inner tube. However, the present application is distinguishable since the connecting wall interconnects one end of the inner tube and one end of the outer tube, and the other end is open for receiving the adhesive ring. Clearly, in Nakashiba et al. '922 the adhesive ring is not insertable into the annular gap. These are critical features which distinguish the present application over Nakashiba et al. '922.

Therefore, Applicant respectfully submits that claims 7-8 and 14-15, as amended, and the claims dependent therefrom are in a condition for allowance over the rejection under §102(b), which allowance is respectfully solicited.

Claims 7-8 and 14-15 were rejected under 35 U.S.C. §103(a) as being obvious over Nakashiba et al. (US 5,150,922) in view of Harget et al. (WO 98/531241). The Applicant respectfully traverses this rejection for the reasons set forth above and as follows.

The WO 98/53241 application to Harget et al. discloses a method for the manufacture of a heat fusion fitting. The method includes the steps of forming a body 1 of a layer of crosslinked polymeric material, embedding a heating element 11 in a second polymeric material to form an insert, and the heating element has a Curie temperature equal to or greater than the crystalline melting point of the second polymeric material. The method further includes the step of assembling the body and insert to form the fitting.

None of the references, alone or in combination with each other, teach or otherwise suggest the claimed invention of claims 7 or 14 as amended. Specifically, the Nakashiba et al. '922 reference discloses a laminate structure with a heating element either embedded in or adjacent a non-crosslinked polyolefin layer. The Harget reference discloses a heating element embedded or partially embedded in a second polymeric material to form an insert. Neither reference discloses a removable holder with an induction coil that is placed around the joint and then removed. Clearly, an embedded heating element is not the same as a removable heating element placed on the outside of the structure and removed after the adhesive has melted, as disclosed by the Applicant.

The Examiner argues that Nakashiba et al. anticipated claims 7-8 and 14-15 because it would have been obvious to use a solid ring of hot melt adhesive for the solid ring of thermoplastic material in Figure 4 of Nakashiba et al., since Harget et al. discloses that the second polymeric material may be a hot melt adhesive. Again, the structure of the joint of the present application is clearly distinguishable from the structure of Nakashiba et al., or Harget et

al., since the present invention teaches a coupling element that includes an inner tube insertable into a fluid line, an outer wall, and a connecting wall interconnecting the inner tube and outer tube to form an annular gap for receiving a solid ring of hot melt adhesive against the connecting wall. The present invention also discloses a removable holder with a heating means that is placed around the coupling element and removed after the adhesive is melted. This is not the same structure as a non-removable heating element embedded in the coupling element.

The combination of references, if even combinable, would not render obvious Applicant's invention as claimed in claims 7 and 14 as amended. The combination of Nakashiba et al. and Harget et al. would yield an electrofusion joint for mating two members. The joint would include a tubular crosslinked polyolefin layer and two joining portions forming a non-crosslinked polyolefin layer that would be formed as an integral part of an inner side of the crosslinked polyolefin layer. A heating electrical wire is provided either within or on an outer or inner surface of the crosslinked polyolefin layer. A support integral with the first layer would form a groove for receiving the mating members. The second layer would be a hot melt adhesive.

Such a proposed combination is clearly distinguishable from Applicant's invention, in that the present invention includes a tubular coupling element formed by an inner tube having one end insertable into a fluid member, and a second end joined to a concentric outer tube by a connecting wall and an adhesive ring adjacent the connecting wall. In addition, the proposed combination is distinguishable since it teaches a laminate structure. Further, the proposed combination is distinguishable since the heating element is not removable, but embedded in the tubular coupling element. Neither of these references discloses an inner tube joined at one end to a concentric outer tube. Neither of these references discloses a removable heating element.

Neither of these references discloses an insertable ring of hot melt material against a connecting wall.

Therefore, it is respectfully submitted that claims 7 and 14 and the claims dependent therefrom are allowable over the rejection under 35 U.S.C. §103(a).

Claims 9-10 and 12-13 were rejected under 35 U.S.C. §103(a) as being obvious over Nakashiba et al. (US 5,150,922) in view of Harget et al. (WO 98/531241) and further in view of Europe '831 (EP 0 289 831) and optionally Great Britain '496 (GB 2 133 496). The Applicant respectfully traverses this rejection for the reasons set forth above with respect to claim 7. Both of these claims depend from claim 7. Since the Applicant has shown that the base claim is allowable over the first cited reference, likewise the dependent claims are allowable.

Claim 11 is rejected under 35 U.S.C. §103(a) as being obvious over Nakashiba et al. (US 5,150,922) in view of Harget et al. (WO 98/531241) and further in view of German '299 (DE 26 03 299). The Applicant respectfully traverses this rejection for the reasons set forth above with respect to claim 7. This claim depends from claim 7. Since the Applicant has shown that the base claim is allowable over the first cited reference, likewise any dependent claim is allowable.

The Examiner indicated that claim 18 would be allowable if amended to overcome the rejection under 35 U.S.C. §112. The Applicant has amended claim 18 to further define the solid ring of adhesive as being of the hot melt type. Therefore, Applicant respectfully submits that claim 18 is in a condition for allowance, which allowance is respectfully solicited.

Based on the above, Applicant submits that the claims are in condition for allowance, which allowance is respectfully solicited. If the Examiner finds to the contrary, it is respectfully

requested that the undersigned in charge of this application be called at the telephone number given below to resolve any remaining issues.

Respectfully submitted,

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